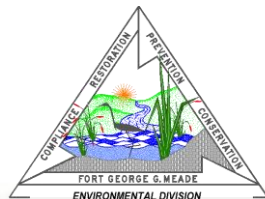
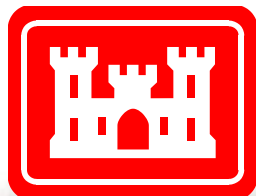




# Fort George G. Meade

## Monitoring Wells 125d & 126d Interim Measures Overview

26 March 2009



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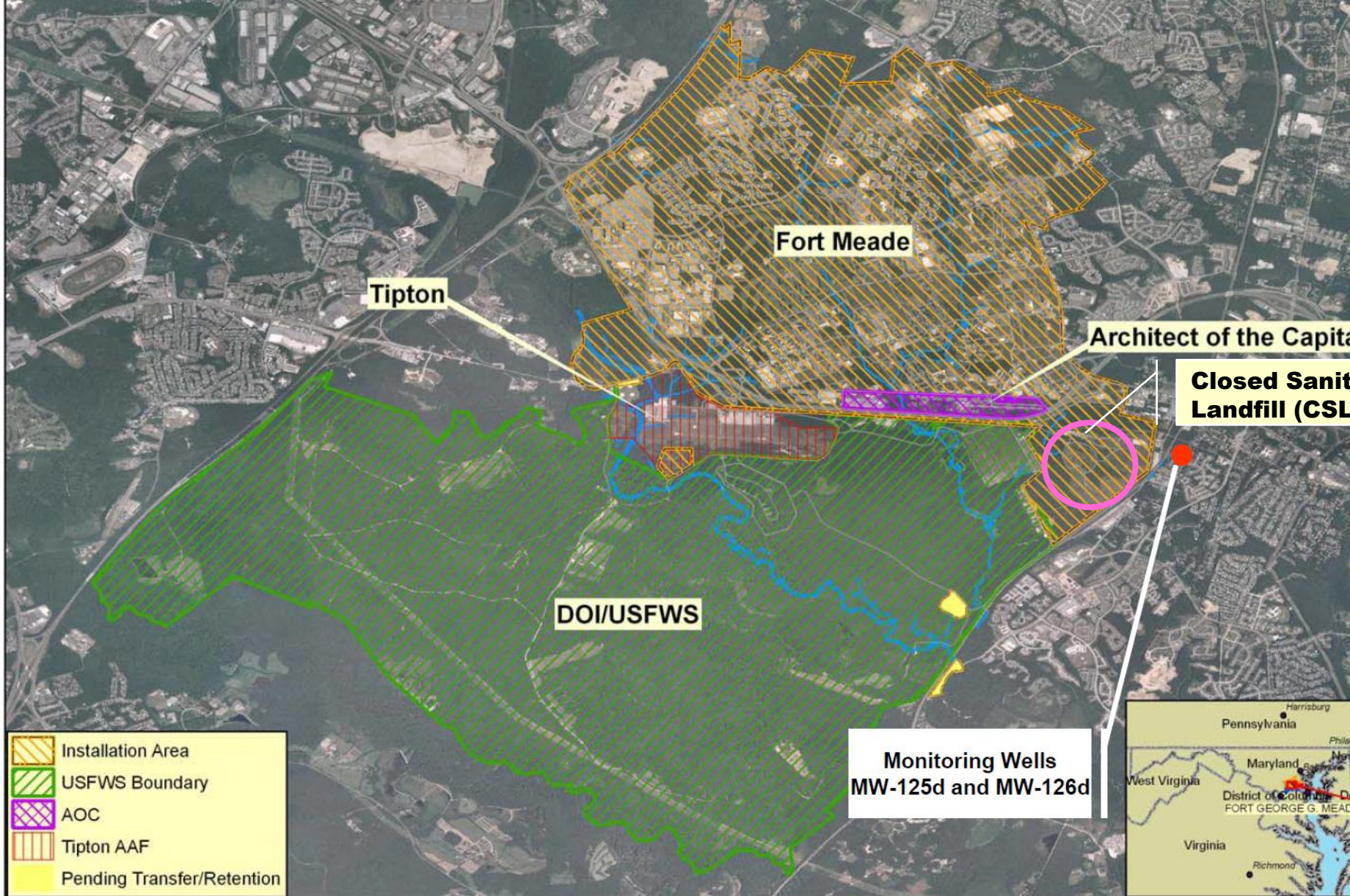
# Agenda



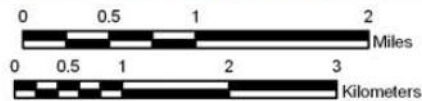
1. Introduction
2. Technical Approach
3. Schedule
4. Q&A







Created by:  
Office of the Assistant Chief of Staff for Installation Management (OACSIM)  
Base Realignment and Closure Division (BRACD)  
Data Source: Geographic Information System Repository (GISR),  
BRACD and Fort George G. Meade







# Project Location



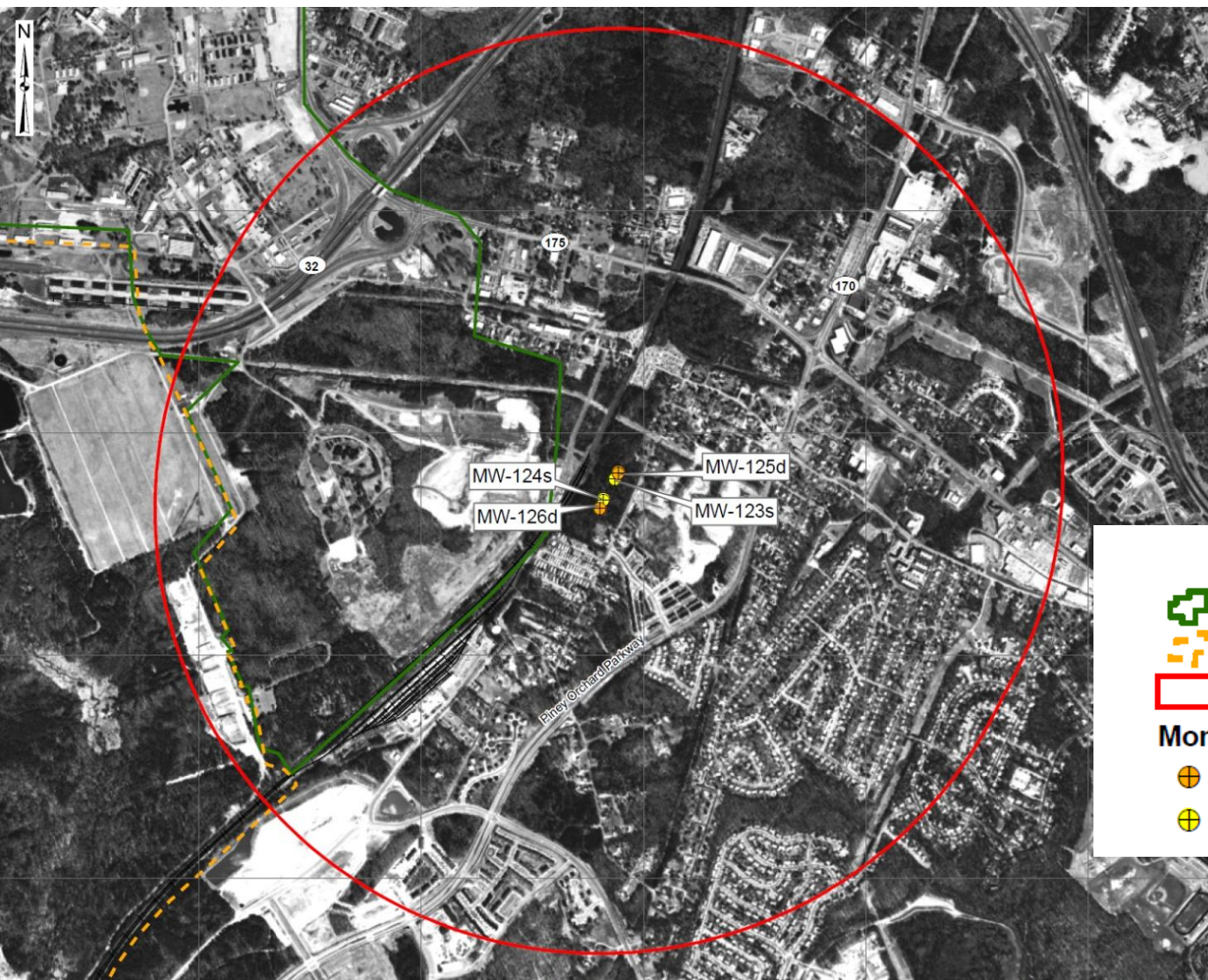
- Monitoring wells 123s, 124s, 125d, 126d
  - Residential area
  - SE border of FGGM
  - Eastern edge of N. Patuxent Rd
- Area of concern is a 1-mile radius surrounding MW-125d & -126d







# Area of Concern



## Legend

- Installation Boundary
- BRAC Boundary
- 1 Mile Radius of Monitoring Wells
- Monitoring Well**
  - Deep Monitoring Well
  - Shallow Monitoring Well

## Analytical Test Results Summary

Army Test Results Summary			
Well No. / Contaminant	2004 Results (ug/l)	2008 Results (ug/l)	Federal Maximum Contaminant Level
MW-125d /CCl4	21.3	25	5
MW-125d /PCE	2.8	5	5
MW-125d /TCE	0.5	1 estimated	5
MW-126d /CCl4	4.1	51	5
MW-126d /PCE	12.4	51	5
MW-126d /TCE	3.5	16	5
CCl4 – Carbon Tetrachloride PCE – Tetrachloroethene TCE – Trichloroethene ug/l – micrograms per milliliter			

### Notes:

- Anne Arundel Co. private well test results show only copper and lead above MCL's (2005 – 2008)
- No VOC exceedances (2005 – 2008)



# Project Objectives



- Main objective (established by EPA): Assess potential exposure pathways (potable water & indoor air quality) so that appropriate measures can be taken to protect human health.
- Process to determine health risk:
  - Survey of potential groundwater (GW) users at monitoring wells (MW) 125d & 126d
  - Sample private wells at potential risk for VOCs
  - Compare results to drinking water standards
  - Assess potential vapor intrusion risks related to groundwater impact







# Geology/Hydrology Characteristics



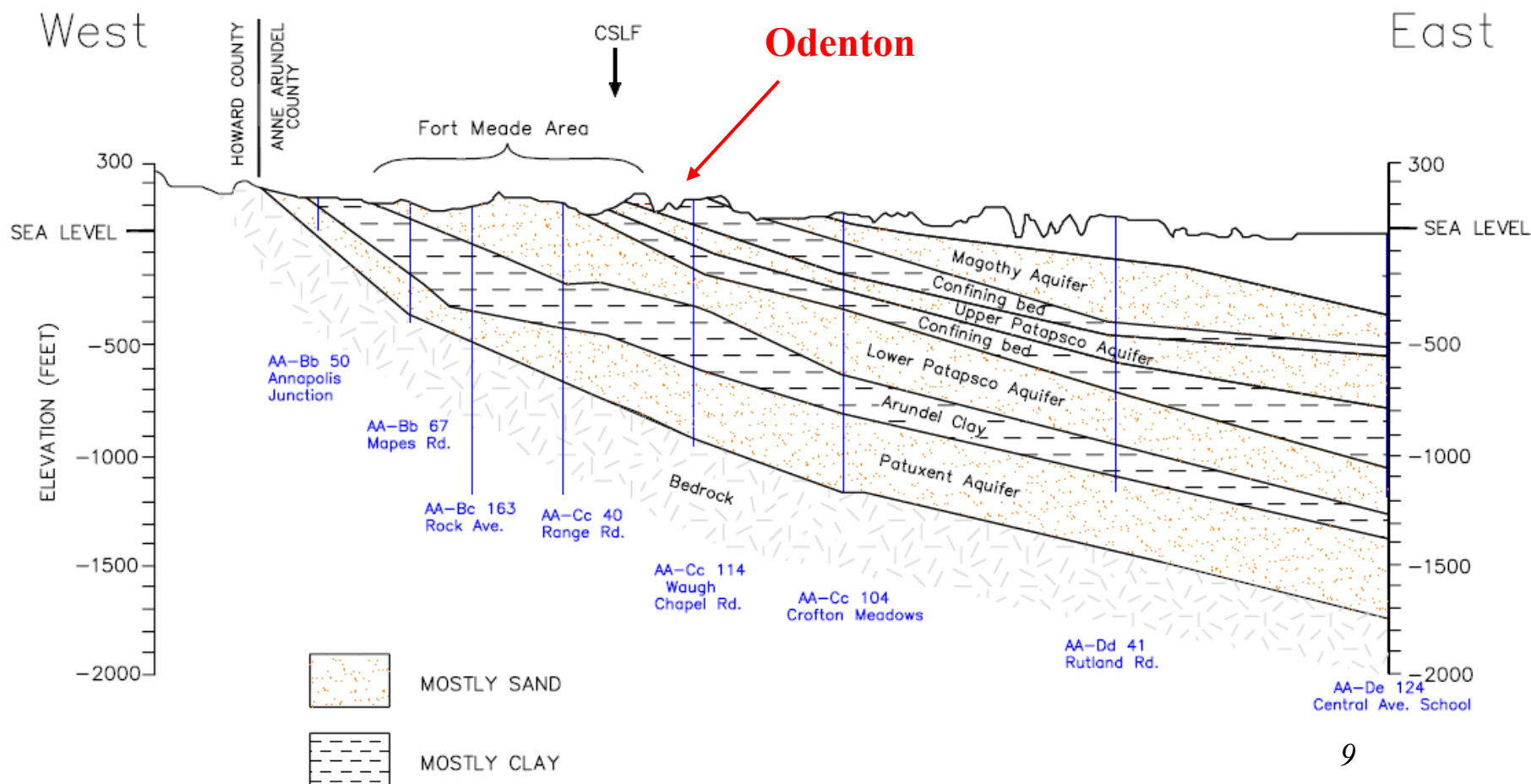
- The groundwater of concern is located in the Lower Patapsco Aquifer (deep aquifer), bounded by a clay confining layer
- Monitoring Wells 125d and 126d are screened in the Lower Patapsco Aquifer
- Monitoring Wells 123s and 124s are screened in the Upper Patapsco Aquifer







# Patapsco Aquifers





# Well Construction Data



- Two well clusters of shallow & deep MWs
- MW-123s
  - 45 ft total depth
- MW-124s
  - 55 ft total depth
- MW-125d
  - 224.5 ft total depth
- MW-126d
  - 240 ft total depth





# CSL RI Report



- CSL RI Report, August 2007
  - Target VOCs identified in the Lower Patapsco aquifer wells (MW-125d & 126d)
    - $\text{CCl}_4$  detected above MCL in MW-125d
    - PCE detected above MCL in MW-126d
    - TCE detected below MCL in MW-125d & 126d
  - No VOCs detected in Upper Patapsco aquifer wells (MW-123s & 124s)



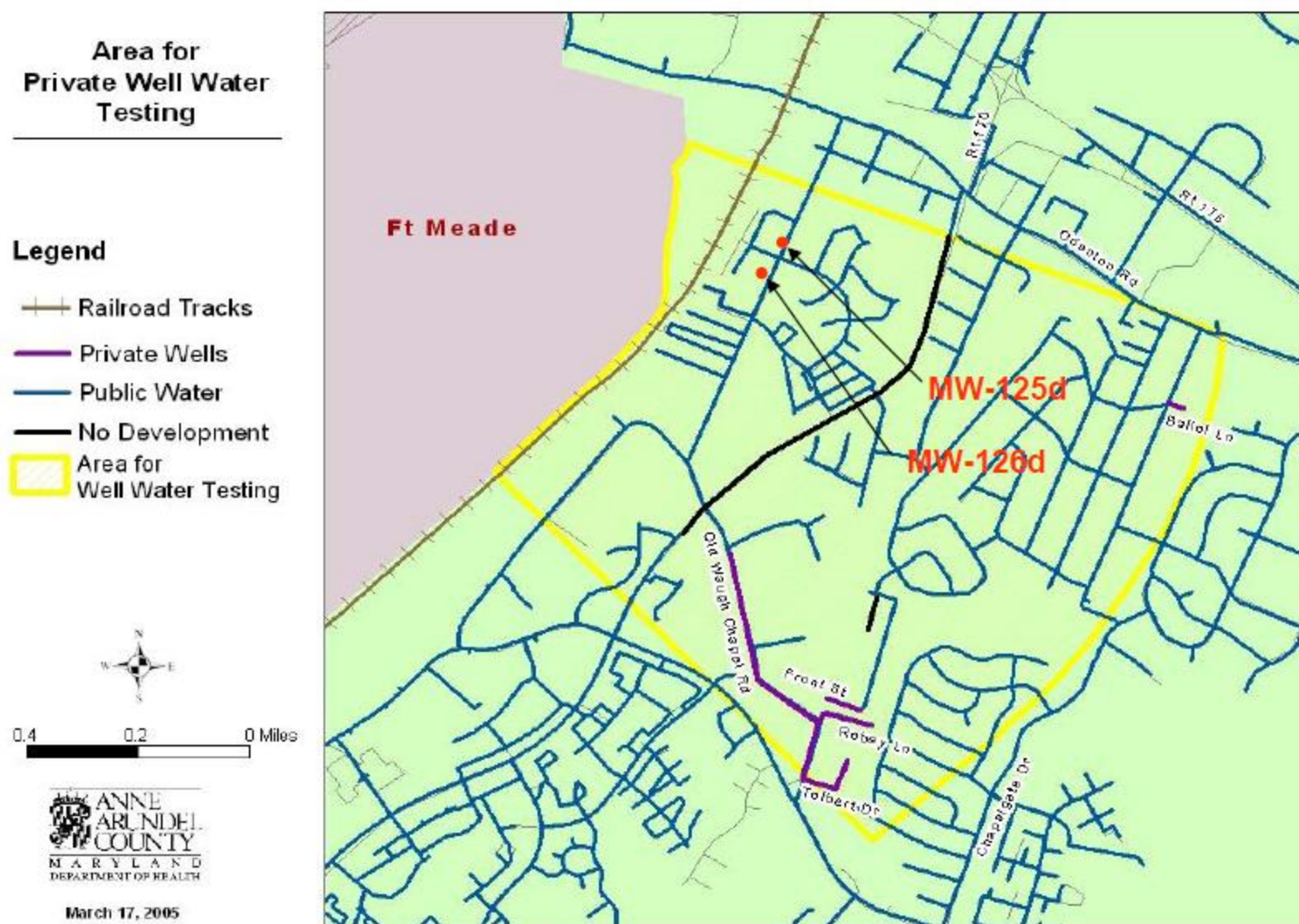


# Anne Arundel County Sampling of Private Wells

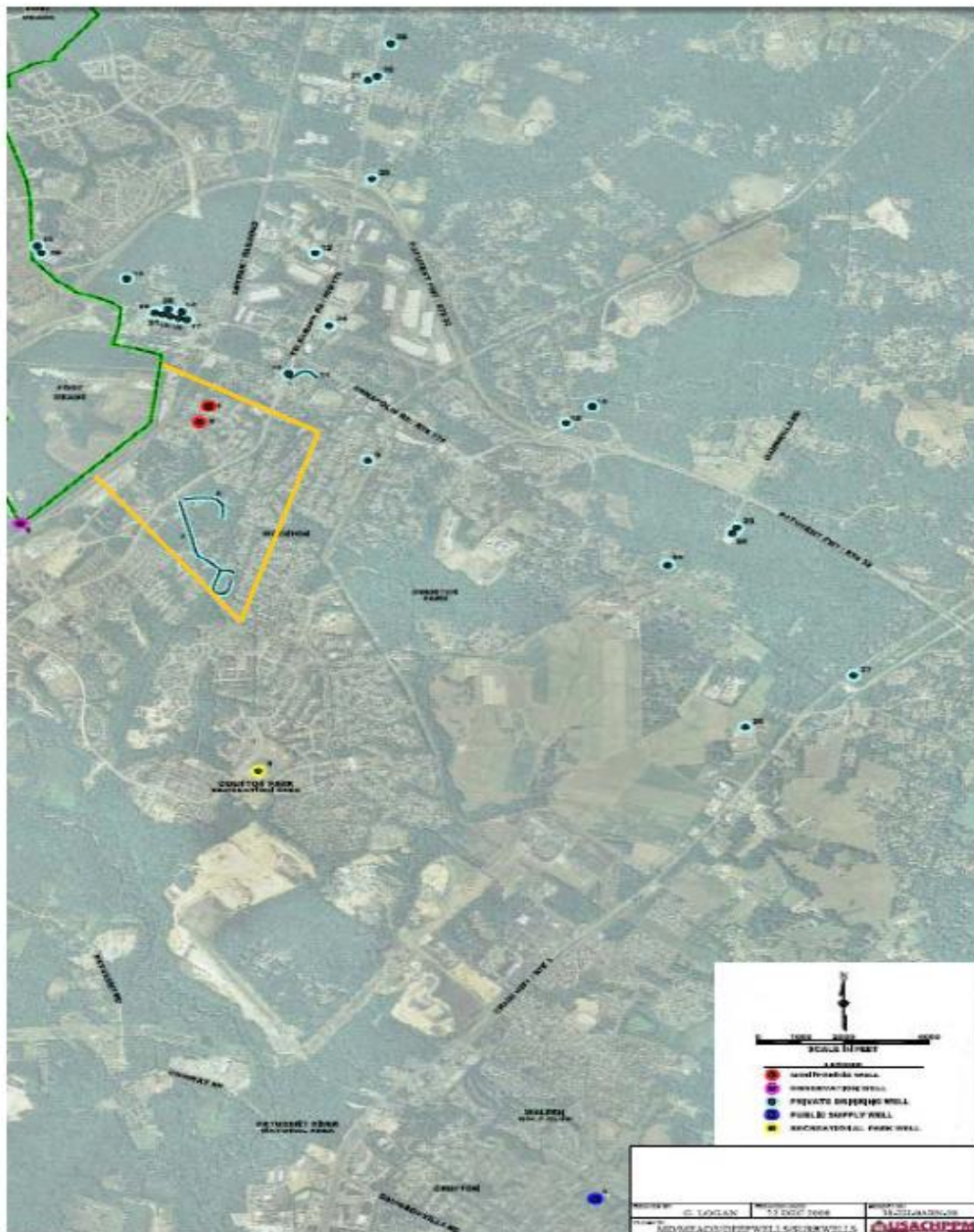
- Anne Arundel County sampling of private wells
  - Sampled from 2005 to 2008
  - Only copper and lead above MCLs
  - VOCs detected in select wells – all below MCLs



# Area Private Wells Were Tested By Anne Arundel County



# Preliminary Well Search Results (December, 2008)







# Timeline



2003:  
Wells  
Installed

2005-2008:  
Residential  
Wells  
sampled by  
County

2009:  
Interim  
Measures  
Study

2005:  
Wells  
sampled  
during  
CSL RI

2008:  
Wells  
sampled by  
Army



# 2008 – 2009 Efforts



November  
2008

- 7 – GW Sampling by USACHPPM
- USACHPPM performed 3-mile well search downgradient

January  
2009

- 21– Data Validation received
- 21 – Confer with regulators and AA County
- 22 – Briefed RAB (Nov 08 results & GW/receptor investigation plan)
- 29 – Letter from EPA directing Army to prepare IM Work Plan

February  
2009

- 9 – Submitted Draft IM Work Plan to stakeholders

March  
2009

- 19 – Received EPA comments on Draft IM Work Plan
- 25 – Meeting with AA County and EPA
- 26 – RAB briefing
- 27 – Submit Final IM Work Plan to stakeholders



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# Path Forward

- Re-assess for potential receptors
- Work with AA County to sample private wells
- Conduct full-scale groundwater investigation to determine the extent of the plume





# Technical Approach

## Technical Approach

- Interim Measures Work Plan (on-going)
- Public Outreach (started 22 Jan 2009, ongoing)
- Private Well Survey (on-going)
- Bottled Water Distribution
- Well Sampling (Private & Monitoring Wells) (MW sampling on-going)
- Vapor Intrusion Assessment (on-going)
- Reporting



# Interim Measures Work Plan



- Outlines the technical approach for the project:
  - Field Sampling Plan
  - Health & Safety Plan
  - Quality Assurance Project Plan
  - Community Relations Plan
  - Qualifications & Resumes of Contractor and Subcontractors





# Public Outreach



- Letters to Residents
  - Pre-survey notification letters
- Public Meetings
  - At beginning of project to inform community
  - After fieldwork to share the information
  - Additional public as necessary
- RAB Meetings
  - As scheduled to discuss status and plans
- Contact Residents
  - ROE requests
  - Presentation of results to sampled property owners/tenants





# Private Well Survey



- Information Gathering
  - Identify property owners in area of concern
  - Review AA County sampling
  - Research water supply records
  - Research well permits
- Identification of Properties with Potential Wells
- Pre-Survey Notification to Residents
- Door-to-door Survey
- Provide Bottled Water to properties with private wells



# Well Sampling

- Private & Public Well Sampling
  - Water samples collected from wells identified during the survey for VOC analysis
  - Sampled two times within a two-month period
  - Validated data provided to residents in timely manner
- Monitoring Well Sampling
  - GW samples collected from existing MW 125d, 126d, 123s, & 124s
  - Each MW sampled two times within a two-month period



# Well Sampling (cont.)



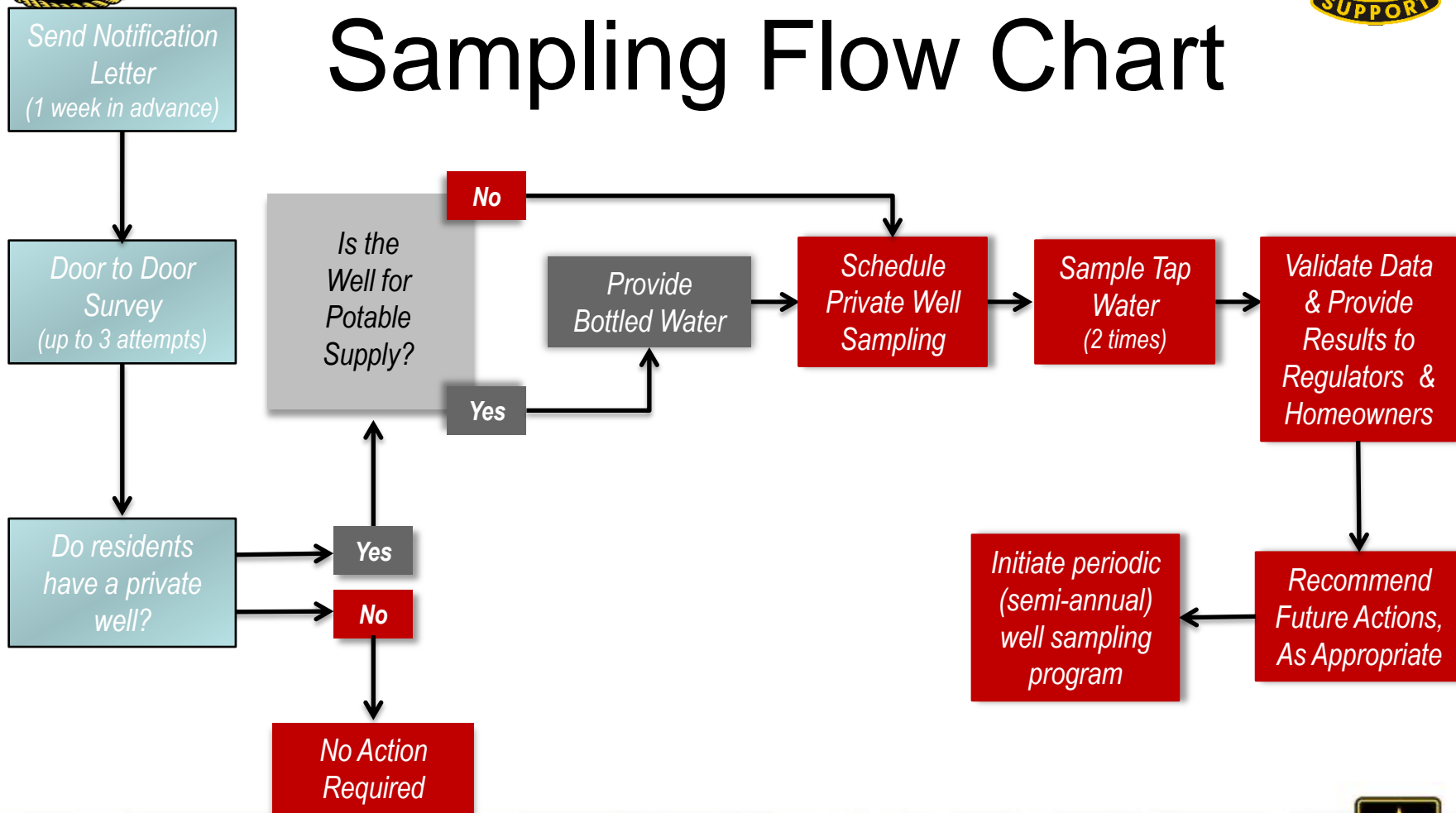
- Data Analysis and Validation
  - All water samples analyzed by USEPA Method SW846/8260
  - Samples will be analyzed for VOCs including  $\text{CCl}_4$ , TCE, & PCE
  - A third-party data quality review and validation will be conducted for all samples (100%)
  - Laboratory and data validation will have a 3 day TAT
- IDW Plan
  - MW water and related IDW will be containerized and disposed through FGGM







# Residential Well Sampling Flow Chart





# Vapor Intrusion Assessment



- Vapor Intrusion Assessment
  - GW, soil, and hydrogeologic data are being evaluated to determine likelihood of vapor intrusion risk to potential receptors within the investigation area
  - Vapor Intrusion Technical Memorandum is being prepared summarizing the results of the vapor intrusion assessment





# Reporting



- Reporting efforts for this project include, but are not limited to, the following:
  - Interim Measures Work Plan
  - Letter Report of Private Well Survey
  - Interim Letter Report – Results of Round 1 Sampling Efforts
  - Vapor Intrusion Technical Memorandum
  - IDW Letter Report
  - Interim Measures Report





# Project Schedule\*



✓ Monitoring Well Sampling #1 – March/April, 2009

*\*\*In Progress!*

✓ RAB Meeting #1 – March 26, 2009

- Final Interim Measures Work Plan – March 27, 2009
- Public Meeting #1 – April 2009
- Mail Letter to Residents – April 2009
- Door-to-Door Well Survey – April/May 2009
- Private Well Sampling #1 – May 2009

\* All dates are approximate





# Project Schedule\* (cont.)

- RAB Meeting #2 – May 2009
- Private and Monitoring Well Sampling #2 – July /August 2009
- Supply Bottled Water – April 2009
- Public Meeting #2 - October 2009
- Final Interim Measures Report – December 2009

*\* All dates are approximate*



# QUESTIONS AND ANSWERS







# Points of Contact



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